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## Research article

# Does childhood victimization predict specific adolescent offending? An analysis of generality versus specificity in the victim-offender overlap



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## ABSTRACT

**Background:** A large body of research has examined the relationship between victimization and future offending, with results suggesting that crime victims are at higher risk of future criminal behavior—known as the victim-offender overlap. Prior studies have primarily examined the relationship between general victimization (e.g., violent victimization, sexual abuse, and more) and general offending (e.g., violence, sexual offending, and drug use), and focused on adult populations.

**Objective:** The goal of the present study is to expand on prior literature by examining if *specific* forms of childhood victimization increase the risk of *specific* and analogous forms of offending among delinquent youth.

**Method:** Based upon a population of 64,329 high-risk youth offenders in Florida, this study evaluates the specificity of the overlap among youth who were physically abused, sexually abused, or witnessed illegal substance use at home during childhood to determine if these forms of victimization increased the risk of violence, sexual offending, and drug use, respectively, when assessed in multivariate logistic regression models.

**Results:** Results provide considerable support for specificity in the victim-offender overlap, as hypothesized. Specifically, experiencing physical abuse (OR = 1.55,  $p < .001$ ), sexual abuse (OR = 3.58,  $p < .001$ ) and witnessing household substance abuse (OR = 1.66,  $p < .001$ ) in childhood each significantly and substantially increased the risk of analogous criminal behavior in adolescence, even when controlling for other risk factors and forms of victimization.

**Conclusion:** This study provided novel evidence for specificity in the victim-offender overlap, even after controlling for confounding variables. Practical implications for early intervention and crime prevention are discussed, as well as implications for future research. Highlighting the importance of specificity in the victimization and adverse childhood experience (ACE) paradigms.

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## 1. Introduction

The relationship between victimization and offending is well established, with research consistently indicating that youth who are victimized are at higher risk of offending behavior during adolescence and adulthood (Broidy, Daday, Crandall, Klar, & Jost, 2006; Jennings, Higgins, Tewksbury, Gover, & Piquero, 2010; Klevens, Duque, & Ramírez, 2002; Lauritsen & Laub, 2007; Maldonado-Molina, Jennings, Tobler, Piquero, & Canino, 2010; Mustaine & Tewksbury, 2000; Schreck, Stewart, & Osgood, 2008; Schreck, Wright, & Miller, 2002). This empirical overlap between victims and offenders, known as the victim-offender overlap (henceforth VO overlap), is so consistent that it has been referred to as one of the few “facts” in criminology (Gottfredson, 1981; Jennings, Piquero, & Reingle, 2012; Maxfield, 1987; Reiss & Roth, 1994).

In his seminal work on victim-precipitated homicide, Wolfgang (1958) was among the first to empirically establish that victims and offenders are highly similar in terms of their characteristics and behaviors. Specifically, this study found that victims and offenders are both more likely to be males with a history of violent offending, and that victims and offenders are more likely to display aggressive behaviors compared to the general population. This literature has been expanded with contemporary research indicating that victims and offenders also share similar demographics (i.e. being younger and minorities), offending histories, engagement in risky behaviors, and reside in disorganized neighborhoods (Broidy et al., 2006; Cops & Pleysier, 2014; Daday, Broidy, Crandall, & Sklar, 2005; Dobrin, 2001; Lauritsen, Sampson, & Laub, 1991; Mustaine & Tewksbury, 2000). Researchers have studied the association between general offending and victimization (Hiday, Swanson, Swartz, Borum, & Wagner, 2001; Jensen & Brownfield, 1986; Lauritsen et al., 1991; Mawby, 1979; Meade, Jennings, Gover, & Richards, 2017; C.S. Widom, 1989, 1989b; Widom, Czaja, & DuMont, 2015), and more specialized relationships, including sexual abuse and sexual offending (Felson & Lane, 2009; Fox, 2017; Soothill, Francis, Sanderson, & Ackerley, 2000), violent victimization and violent offending (Cops & Pleysier, 2014; McGloin, Schreck, Stewart, & Ousey, 2011; Posick, 2013; Silver, Piquero, Jennings, Piquero, & Leiber, 2011), and property victimization and property offending (Posick, 2013). These studies provide support for the similarities between victims and offenders, and the strong correlations in their behaviors (Jennings et al., 2012).

An important gap in the literature is whether, and how strongly, a specific victimization experience is associated with a specialized type of offending, while controlling for other types of offending. Offending research examining the possibility of such specializations is limited, and has produced mixed findings. Such mixed findings validate the need for more research on the specificity in the VO overlap, particularly among juvenile offenders. Therefore, this study examines whether youth are more likely to commit the types of offenses that they experienced in their childhood, above and beyond all other types of offending behaviors.

## 2. Generality and specificity in the victim-offender overlap

Despite voluminous research examining this phenomenon generally, there is still a dearth of studies testing the generality versus specificity of the VO overlap. While prior research suggests that experiencing any form of victimization leads to an increased risk of any type of offending (i.e., generality in the VO overlap), the magnitude and significance of the association between specific types of victimization (e.g., sexual abuse) and specific types of criminal behavior (e.g., sexual offending) (i.e., specificity in the VO overlap) has not been thoroughly examined.

### 2.1. Generality of the VO overlap

Although specificity in the relationship between victimization and future offending has largely gone untested, existing literature has provided support for generality in the VO overlap. Prior research has found that childhood abuse significantly increases the risk of general juvenile offending (Loeber & Farrington, 2000), with up to 90 % of all juvenile offenders in the U.S. victimized by abuse or trauma in childhood (Dierkhising et al., 2013). This relationship between generalized abuse and/or victimization increasing the risk of general offending has been supported and explained by theoretical research. Specifically, Gottfredson and Hirschi's (1990) theory of self-control posits that children who are not properly socialized, due to poor parenting or victimization experiences, may not develop the self-control necessary to avoid thrill-seeking behaviors, which often leads to crime. Furthermore, this lack of self-control may also lead them to enter risky situations, which can simultaneously increase the risk of victimization. Consequently, self-control theory can be used to explain the increased risk of both offending and victimization for those with lower levels of self-control (Schreck, 1999).

Similarly, some studies have found that broad types of victimization may increase the risk of specific forms of offending, such as violence (Dodge, Bates, & Pettit, 1990; Fox, Perez, Cass, Baglivio, & Epps, 2015; Maxfield & Widom, 1996; Piquero, Farrington, & Blumstein, 2003; Smith & Thornberry, 1995; C. Widom, 1989) and sexual offending (Jennings & Meade, 2017; Jennings, Zgoba, Maschi, & Reingle, 2014). For instance, Maxfield and Widom (1996) found that childhood physical abuse, sexual abuse, and neglect increase the risk of violence during adolescence by more than 200 %.

Importantly, not all children who experience victimization will offend later in life: some research has found that these youth may develop resilience through their victimization experience. For example, while some sexually abused children will abuse others, not all children exposed to such experiences do this (Brownlie, 2001). As such, some youth may avoid offending despite adverse experiences (Gilligan, 2000). Furthermore, research has also indicated that the link between victimization and offending may vary based on intervening variables. These include neighborhood context (Berg, Stewart, Schreck, & Simons, 2012), victim-offender relationships (Zimmerman, Farrell, & Posick, 2017) and offender decision-making (Averdijk, Van Gelder, Eisner, & Ribeaud, 2016).

Furthermore, some research finds mixed support for the VO overlap. For instance, Broidy et al. (2006) found a significant overlap

among victims and offenders in their study, however the majority of the victims in their sample were never arrested for an offense. Mayhew and Elliott (1990) also found an association between victimization and offending, but only among elderly victims (Mayhew & Elliott, 1990). Additionally, studies have found that drug users are not at an increased risk of victimization (Jensen & Brownfield, 1986), a weak link was found between homicide victims and prior offending (Broidy et al., 2006; Regoeczi, 2000), and weak support was found for the association between theft victimization and offending, while strong support was found for offending behavior among assault victims (Savitz, Lalli, & Rosen, 1997).

However, some research has found potential support for a link between specific victimization and specific offending, although only one form of offending was examined. Specifically, Fox et al. (2015) found that physical abuse was the strongest predictor of future violence, as youth who experienced physical abuse in childhood were 58 % more likely to be serious, violent, and chronic offenders in adolescence. This study provides additional support for the VO overlap, and potential evidence for specificity in this relationship.

## 2.2. Specificity in the VO overlap

With respect to specificity in the types of victimization and future offending, less research has been conducted. However, much of the research supports the possibility of specificity in the VO overlap, where specific forms of victimization are much more likely to increase the risk of analogous offending behaviors versus other types of offending. The bulk of this research focuses on sexual abuse in childhood and future sexual offending (Felson & Lane, 2009; Fox, 2017; Soothill et al., 2000). For instance, Felson and Lane (2009) found that sexual victimization was more likely to lead to later sexual offenses versus non-sexual offenses, and physical abuse was more likely to lead to violent offenses than non-violent offenses. Fox (2017) found that sexual victimization was one of a number of traits distinguishing sexual offenders from non-sexual offenders. However, not all studies have found evidence in support of specificity among sexual abuse victims (Papalia, Luebbers, & Ogloff, 2018; Plummer & Cossins, 2018; Spaccarelli, Bowden, Coatsworth, & Kim, 1997). For instance, Plummer and Cossins (2018) found that female victims do not engage in later sexual offending. Papalia et al. (2018) concluded in their review of the research that there remains insufficient evidence to confirm or refute the relationship between sexual abuse and later sexual offending.

Research has also indicated a specific association between violent victimization and violent offending (Cops & Pleysier, 2014; McGloin et al., 2011; Posick, 2013; Silver et al., 2011). Once again, not all research supports specialization among physically abused victims (Fagan, 2005; Franzese, Menard, Weiss, & Covey, 2017; Zingraff, Leiter, Myers, & Johnsen, 1993). Fagan (2005) found that experiencing physical abuse was associated with a number of offenses, including both violent and non-violent crimes. Franzese et al. (2017) found that both witnessing parental violence and experiencing physical abuse were not directly associated with later violent offending.

Other studies not specifically testing an overlap in offending have shown that children living in households where substance and alcohol abuse are present are more likely to use substances themselves, as compared to children whose parents do not abuse drugs and alcohol (Chassin, Pitts, DeLucia, & Todd, 1999; Hussong et al., 2008; Rossow, Keating, Felix, & McCambridge, 2016; Sher, Grekin, & Williams, 2005).

The specificity in the VO overlap could potentially be explained, as some theorists suggest, by a causal relationship between these experiences/behaviors (Lauritsen et al., 1991). For instance, social learning theory aligns with the idea of a specific causal relationship between victimization and offending (Burgess & Akers, 1966), as Akers (2011) suggested that modeling of others' behavior, even when witnessed as a victim of it, may lead individuals to later imitate that behavior, thereby causing the VO overlap. In other words, individuals may learn behaviors such as physical or sexual violence by experiencing the abuse themselves.

While research has examined specific types of victimization leading to the same type of offending, in line with Akers' proposition, the existing research has its limitations. Specifically, these studies typically do not include multiple tests of specificity in the models, or utilize relevant criminological theory moderator variables which may potentially explain away all or part of the association between victimization and offending. Only one study to date has examined the specificity of the VO overlap utilizing multiple tests of specificity and relevant criminological variables (see Posick, 2013). However, the Posick (2013) study did not control for the effects of sexual victimization and offending. As indicated above, sexual abuse has been shown to be a strong predictor of sexual offending, as compared to other offense types (Felson & Lane, 2009). It has also been shown that sexual abuse is associated with greater offending behavior in general (Fox, 2017; Jennings et al., 2014). This study aims to expand upon previous research by including additional tests of specificity (i.e. sexual abuse and household substance abuse) and measures of other forms of childhood trauma and victimization, such as emotional abuse, neglect, and household violence, as these variables have been found to be strongly related to offending (Chapple, Tyler, & Bersani, 2005; Muniz et al., 2019; C.S. Widom, 1989). Additionally, measures of impulsivity, antisocial peers, psychological factors and poverty were also included, as these have been shown to be strong risk factors for offending, especially for adolescents (Monahan, Steinberg, & Cauffman, 2009). This examination of specificity within the VO overlap can provide a more nuanced understanding of the VO relationship, which policy makers and treatment providers can utilize to improve prevention and reduction of offending and victimization.

## 3. Current study

To date, research is mixed on whether the relationship between victimization and offending is general in nature, meaning multiple forms of victimization increase the risk of multiple forms of offending, or if it is more specific, and certain types of victimization experiences specifically increase the risk of the analogous offending behavior. Moreover, most prior research has not

adequately controlled for relevant risk factors and types of victimization and offending behavior. The current study expands on prior research by examining the overlap between violent victimization and violent offending, sexual victimization and sexual offending, and household substance abuse and drug abuse among adolescent youth, while controlling for co-occurring forms of victimization and prominent criminogenic, psychological, and demographic risk factors. Here, we test four competing hypotheses regarding the specificity versus generality of the VO overlap.

**Hypothesis 1.** Violent victimization in childhood will be the strongest predictor of violent offending in adolescence.

**Hypothesis 2.** Sexual victimization in childhood will be the strongest predictor of sexual offending in adolescence.

**Hypothesis 3.** Household substance abuse in childhood will be the strongest predictor of drug offending in adolescence.

**Hypothesis 4.** Childhood victimization will increase the risk of non-analogous offending behaviors in adolescence.

In short, the aim of the current study is to test the specificity versus generality of the relationship between specific forms of victimization and specific forms of offending, based upon a population of delinquent youth. In the following section, we detail the data and methods used to test our hypotheses and examine the specificity versus generality of the VO overlap.

## 4. Method

### 4.1. Participants and procedures

This study uses data obtained from the Florida Department of Juvenile Justice (FDJJ), consisting of a population of 64,639<sup>1</sup> delinquent juveniles referred to FDJJ for at least one misdemeanor and/or felony within the state of Florida, who turned 18 years old between January 1<sup>st</sup>, 2007 and December 31<sup>st</sup>, 2012, and were administered the full Positive Achievement for Change Tool (PACT) risk assessment. The PACT is typically administered to higher-risk youth, as it is used to assess recidivism risk and rehabilitation or treatment needs for each juvenile offender (Baglivio, 2009). PACT data are collected through semi-structured interviews, a case file examination, and an audit of official state documentation on juveniles such as those accumulated by the Department of Children and Families (DCF), as well as local and state law enforcement agencies. The multiple-layered data assemblage and verification process serves to bolster the predictive validity and reliability of the PACT (Baglivio & Jackowski, 2013; Baglivio, 2009; Baird et al., 2013; Winokur-Early, Hand, & Blankenship, 2012).

Measures used in this study were gathered from the PACT and FDJJ referral records, which contain information on the background, personality, criminogenic risk factors, trauma/abuse victimization, and offending behaviors for each high-risk youth in the dataset. The predictive validity and reliability of the PACT has been validated in several studies, with the effect size of the first generation of the PACT scoring higher than popular risk assessments used with juvenile offending populations in their second and third generations (Schwalbe, 2007; see also Baglivio, 2009; Baglivio & Jackowski, 2013; Baird et al., 2013; Winokur-Early et al., 2012). PACT items used in this study are described below, with more information on PACT coding available in Baglivio et al. (2014).

### 4.2. Independent variables

To examine the specificity versus generality of the relationship between childhood victimization and subsequent adolescent offending, three forms of victimization are used in the analysis: physical abuse, sexual abuse, and household substance abuse. Physical abuse is “any act by a caregiver that results as a non-accidental physical injury to a child” (McCoy & Keen, 2009, p. 63). Sexual abuse is defined as “any sexual activity with a child where consent is not or cannot be given” (Berliner & Elliott, 2002, p. 55). Household substance abuse is “the use or abuse of alcohol or illicit drugs in a manner that either results in harm, or places children at risk of harm” (Ryan, Perron, Moore, Victor, & Evangelist, 2016, p. 91).

As previously reported, physical abuse, sexual abuse, and household substance abuse have each been shown to increase the risk of both general offending (Broidy et al., 2006; Jennings et al., 2010; Klevens et al., 2002; Lauritsen & Laub, 2007; Maldonado-Molina et al., 2010; Mustaine & Tewksbury, 2000; Schreck et al., 2002, 2008; C.S. Widom, 1989), and specific forms of offending (Chassin et al., 1999; Dodge et al., 1990; Felson & Lane, 2009; Fox et al., 2015; Fox, 2017; Hussong et al., 2008; Jennings et al., 2014; Maxfield & Widom, 1996; Piquero et al., 2003; Rossow et al., 2016; Sher et al., 2005; Smith & Thornberry, 1995). Therefore, each form of childhood victimization—physical abuse, sexual abuse, and household substance abuse—are assessed in the PACT using self-reports and cross-checks with agency records with responses coded according to the presence (= 1) or absence (= 0) of each form of victimization. While childhood victimization and abuse were self-reported by the youth, PACT interviewers consult with the Florida Department of Children and Families (DCF) to verify if childhood abuse claims have ever been filed or substantiated, by a DCF case worker.

<sup>1</sup> Of the 20 variables used in this study, 17 had no missing data. Missing data occurred only for the control variable measures of depression (40 cases missing, 0.06% of the total), thought disturbance (41 cases missing, 0.06% of the total), poverty status (929 cases missing data, 1.44% of the total), and the dependent variable of drug offending (1,458 cases missing, 2.27% of the total). However, each of these values fell well below the 10% cutoff for missingness set by Bennett (2001), and therefore no imputation or removal of measures occurred.

### 4.3. Dependent variables

Violent offending is defined as being referred to FDJJ for committing a violent offense as defined by Florida statute, including (but not limited to): homicide, aggravated assault, battery, and robbery. Sexual offending is defined as being referred to FDJJ for committing a sexual offense as defined by Florida statute, such as: sexual battery, sexual assault, child molestation, incest, and lewd and lascivious behavior. A drug offense is defined as being referred to FDJJ for illegal use of substances as defined by Florida statute to include: marijuana, THC oil, cocaine, heroin, opioids, methamphetamine, and more. Each form of offending— violence, sex crimes, and drug use— were coded based upon FDJJ referral data, with the presence (= 1) or absence (= 0) of each offense on one or more occasions between ages 7 and 18. A total of 64,329 cases were included in the violent and sexual offending measures, while 62,871 were included for the measure of drug offending among the youth.

### 4.4. Control variables

To account for potential confounding influences in the analysis, several theoretically-derived criminogenic risk factors, psychological risk factors, and demographic features are included as control variables (Cecil, Viding, Fearon, Glaser, & McCrory, 2017). These experiences include the three primary independent variables: physical abuse, sexual abuse, and household substance abuse (all of which serve as controls for each other in the models). These items were self-reported by the youth and also verified by the Department of Children and Families to determine if claims had been filed and/or substantiated. These variables were coded for the presence (= 1) or the absence (= 0) of each.

Several additional measures of victimization and abuse are included in the analyses. These include emotional abuse, emotional neglect, physical neglect, household mental illness, witnessing household violence and household member incarceration (see Fox et al., 2015 and Fox & DeLisi, 2018 for specific definitions). Emotional (i.e. lack of warmth and attention from caregivers) and physical (i.e. lack of basic needs being met by caregivers) neglect measures were self-reported by youth, and cross-checks were conducted in the official records of DCF with an affirmative response to either indicating these forms of victimization were present (= 1), and negative responses to both indicating these are not present (= 0). Household mental illness was measured by determining whether the youth's household included persons with a mental health history (= 1) or not (= 0). Witnessing housing violence was measured based upon whether a youth self-reported witnessing violence within their home (= 1) versus having no experience with violence within the home (= 0). Last, household member incarceration was measured by determining if the youth's mother; father; older sibling; younger sibling; and/or other member had been previously incarcerated (= 1) versus having no one with history of being in jail/prison (= 0).

Additional risk factors include low self-control, which was determined by the youth's case officer after a series of interviews with the youth on their behaviors and thought processes, and were rated as either showing a high level of self-control and usually thinking before acting (= 0) or is impulsive and often acts before thinking (= 1). To account for potential effects of modeling/imitation and potential specialization in the VO overlap as predicted by social learning theory (Akers, 2011), the differential association component of social learning theory is measured based on the youth's case officers' determination that they admire and/or emulate their antisocial peers (= 1) versus not admiring and/or emulating their antisocial peers (= 0).

Research has indicated that certain psychological risk factors such as lack of empathy, depression and thought disturbances increase the risk of victimization and maltreatment (Friedrich & Boriskin, 1976; Frodi et al., 1978; Hunter, Kilstrom, Kraybill, & Loda, 1978; Sullivan & Knutson, 2000; Westcott & Jones, 1999) and offending (Moffitt & Silva, 1988; Moffitt & Henry, 1989; Moffitt, 1990) among youth. These psychological risk factors may co-occur and confound the relationship between childhood victimization and adolescent offending. Empathy is assessed through the PACT's attitudinal/behavioral domain based upon whether the youth was determined to have some empathy for his/her victim(s) (= 0) versus did not have empathy for his or her victim(s) (= 1). Likewise, depression was coded dichotomously as never or occasionally feels depressed (= 0) versus consistently or always feels depressed (= 1). Finally, thought disturbances were also coded dichotomously depending on self-reports of psychotic experience or previous diagnosis (= 1) versus no known symptoms or diagnoses (= 0).

Finally, several demographic control measures are also included in the analysis, to include the youths' poverty status, gender, and race/ethnicity. PACT assesses poverty status through the annual combined income of youth and family, with poverty status dichotomized as \$15,000 and over (= 0) or below \$15,000 per year (= 1). Gender was coded dichotomously, based upon whether the youth is female (= 0) or male (= 1). Race/ethnicity was defined as non-Hispanic White (= 0), and all other races/ethnicities were coded non-White (= 1). Information on both gender and race/ethnicity are auto-populated into the PACT database from the Juvenile Justice Information Systems (JJIS).

### 4.5. Analytic strategy

The analyses used to address the hypotheses in this study proceed in several stages. First, summary statistics are presented to evaluate the variation or similarity in terms of childhood victimization experiences, offense histories, and control variables for the full sample of justice-involved youth. Next, a series of multivariate binary logistic regressions, including use of the Firth method to account for the relative "rarity" of sexual offending by youth in the sample (King & Zeng, 2001), were conducted. Similar to Poisson negative binomial regression models for count data, the Firth binary logistic regression model accounts for an unequally distributed (dichotomous) dependent variable through the use of penalized likelihood estimations to more accurately estimate the effects of the independent variables on the outcome (King & Zeng, 2001). Given the distribution of those referred for sexual offenses ( $n = 4,153$ ) in



**Table 1**  
Summary Statistics for Victimization and Risk Factors among All Juvenile Offenders and Violent, Sexual, and Drug Offenders in Florida.

	Full Sample %	Violent Offenders %	Sex Offenders %	Drug Offenders %	$\chi^2$
Physical Abuse	29.5	35.5	34.6	33.4	88.9***
Sexual Abuse	11.9	14.7	21.6	12.6	137.7***
Household Substance Abuse	25.0	27.1	24.1	30.9	1,000.0***
Emotional Abuse	32.5	35.1	26.7	38.5	873.2***
Emotional Neglect	18.1	19.5	16.3	19.5	83.9***
Physical Neglect	13.3	15.8	19.9	15.2	78.1***
Household Mental Illness	8.8	10.0	10.5	10.3	99.9***
Household Violence	81.9	87.7	80.0	88.5	981.9***
Household Member Incarceration	65.9	70.8	64.9	72.3	727.3***
Low Self-Control	46.0	51.1	46.2	53.7	948.4***
Admires/Emulates Antisocial Peers	63.6	65.9	51.4	73.5	3,200.0***
Low Empathy	23.2	27.3	23.9	27.7	371.1***
Depression	18.7	21.6	20.3	22.5	363.6***
Thought Disturbance	5.2	6.1	7.6	6.0	47.8***
Poverty Status	19.5	20.3	18.6	19.0	71.3***
Male	78.3	77.9	93.1	81.7	1,500.0***
Non-White	38.2	33.9	50.6	41.3	822.5***
% of Sample	100.0	64.3	6.5	62.9	
<i>n</i>	64,329	41,383	4153	39,547	

Note: Violent, sexual, and drug offending behaviors were mutually exclusive for the chi-square tests of association. \*\*\* $p < .001$ .

comparison to the full sample ( $n = 64,329$ ), multivariate Firth binary logistic regression models are used only for the sexual offending model. Standard binary logistic regressions are used for the violent offending ( $n$  referred for violent offenses = 41,383) and drug offending ( $n$  referred for drug offenses = 39,547) models, as these events were normally distributed in the data.

## 5. Results

### 5.1. Summary statistics

Table 1 presents the bivariate statistics and measures of association for all victimization and risk factor covariates across the full sample and juvenile offending groups. Differences between types of abuse were found for each of the covariates. Approximately 36 % of those physically abused perpetrated violent offenses (the highest of the three offending behaviors), sexual abuse was more likely to lead to sexual offenses at 22 %, and household substance abuse was most likely to lead to drug offenses with 31 % of the youth committing that offense type.

As victimization and abuse often do not occur in isolation, there is a potential issue of multicollinearity. However, relatively low rates of poly-victimization were observed in this sample, with just 9.5 % of youth experiencing both physical and sexual victimization, and 11.2 % experiencing physical abuse and household substance use. Sexual abuse and witnessing household substance abuse were the most common co-occurring forms of victimization at 11.9 %. Only 3.9 % of the sample experienced all three forms of victimization. Furthermore, VIF and bivariate correlation analyses indicated no issues of multicollinearity, with a mean VIF of 1.18 for all variables (VIF range: 1.04–1.27). The results of the bivariate correlations among all measures in this study can be found in Table 2. While many of variables are significantly correlated, all but one fall well below the threshold of .40. Only the correlation between sexual abuse and physical abuse was slightly stronger, at  $r = .41$ .

In the first model of Table 3, violent offending is assessed. All three independent variables, physical abuse, sexual abuse, and household substance abuse, were statistically significant in this model. As predicted in hypothesis one, physical abuse was the strongest predictor of violent offending (OR = 1.55,  $p < .001$ ), with physical abuse raising the risk of future violence by 55 %. Sexual abuse also increased the odds of a youth committing a violent offense (OR = 1.46,  $p < .001$ ), while household substance abuse decreased the odds of violent offending (OR = 0.94,  $p < .01$ ). Nearly all control variables, with the exception of emotional neglect and household mental illness, were statistically significant. Interestingly, antisocial peer association and emotional abuse had a negative relationship with the risk of violent offending in the multivariate model (OR = 0.89,  $p < .001$ ; OR = 0.92,  $p < .001$ ), while all other control variables increased the odds of violent offending.

In Model 2, sexual abuse increased the risk of future sex offending more than 350 % (OR = 3.58,  $p < .001$ ) and was by far the strongest risk factor for this offending behavior among the three forms of victimization, as hypothesized. Contrary to hypothesis four, household substance abuse decreased the odds of sexual offending (OR = 0.89,  $p < .05$ ), and physical abuse was not significantly related to sexual offending. Among control variables, low self-control, physical neglect, household mental illness, low empathy, thought disturbance and being male significantly increased the odds of sexual offending in the multivariate model. Conversely, emotional abuse, emotional neglect, witnessing household violence, emulation of antisocial peers, and certain race/ethnicity types significantly decreased the odds of sexual offending.

Model 3 examined the relationship between victimization and future drug offending. Household substance abuse increased the odds of drug offending by 66 % (OR = 1.66,  $p < .001$ ), and was the strongest predictor of drug offenses among the three forms of

**Table 2**  
Bivariate Correlations Among All Study Variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
(1) Violent offense	1																			
(2) Sexual offense	.17*	1																		
(3) Drug offense	-.01*	-.10*	1																	
(4) Physical abuse	.18*	.03*	.10*	1																
(5) Sexual abuse	.11*	.08*	.02*	.41*	1															
(6) HH substance use	.06*	-.01	.17*	.20*	.12*	1														
(7) Emotional abuse	.07*	-.03*	.15*	.10*	.03*	.16*	1													
(8) Emotional neglect	.05*	-.01	.04*	.13*	.10*	.08*	.18*	1												
(9) Physical neglect	.10*	.05*	.07*	.30*	.19*	.22*	.10*	.14*	1											
(10) HH mental illness	.06*	.02*	.06*	.17*	.13*	.23*	.11*	.06*	.15*	1										
(11) HH violence	.20*	-.01	.20*	.30*	.14*	.17*	.33*	.10*	.14*	.10*	1									
(12) HH incarceration	.14*	-.01	.16	.17*	.17*	.29*	.12*	.05*	.17*	.13*	.23*	1								
(13) Low self-control	.14*	.00	.18*	.18*	.12*	.15*	.30*	.16*	.13*	.11*	.23*	.16*	1							
(14) Antisocial peers	.06*	-.07*	.25*	.10*	.10*	.13*	.26*	.10*	.08*	.06*	.21*	.15*	.36*	1						
(15) Low Empathy	.13*	.00	.12*	.14*	.08*	.11*	.22*	.16*	.10*	.08*	.17*	.12*	.36*	.25*	1					
(16) Depression	.10*	.01	.12*	.30*	.23*	.15*	.14*	.08*	.19*	.16*	.16*	.12*	.16*	.08*	.10*	1				
(17) Thought disturbance	.06*	.03*	.05*	.13*	.11*	.06*	.06*	.04*	.10*	.10*	.08*	.07*	.09*	.05*	.06*	.21*	1			
(18) Poverty status	.03*	-.01	-.02*	.00	.02*	.04*	-.00	.11*	.09*	.04*	.03*	.08*	.00	-.01	.01	.02*	1			
(19) Male	-.02*	.09*	.10*	-.13*	-.30*	-.06*	.07*	-.07*	-.08*	-.06*	-.02*	-.03*	.01	.04*	-.00	-.16*	-.03*	1		
(20) Non-White	.06*	-.02*	-.07*	-.08*	-.09*	-.17*	-.05*	-.01	-.08*	-.09*	-.02*	-.03*	-.04*	.01	.00	-.08*	-.01	.06*	1	

Note: n = 64,329 for items 1-2, 4-15, 19-20. n = 62,871 for item 3, 64,289 for item 16, 64,288 for item 17, and 63,400 for item 18. \*p < .05; HH = household.

**Table 3**  
Logistic Regressions on the Specificity versus Generality of Childhood Victimization and Juvenile Offending.

	Model 1 <i>Violent Offense</i>		Model 2 <i>Sexual Offense</i>		Model 3 <i>Drug Offense</i>	
	OR	SE	OR	SE	OR	SE
<b>Childhood Victimization</b>						
Physical abuse	1.55***	0.04	0.93	0.04	1.06**	0.02
Sexual abuse	1.46***	0.05	3.58***	0.18	0.94	0.03
Household substance use	0.94**	0.02	0.89*	0.04	1.66***	0.04
<b>Control Variables</b>						
Emotional abuse	0.92**	0.02	0.89**	0.04	1.23***	0.03
Emotional neglect	0.99	0.02	0.86**	0.04	0.97	0.02
Physical neglect	1.23***	0.04	1.71***	0.08	0.94	0.03
Household mental illness	1.02	0.03	1.14*	0.06	0.97	0.04
Household violence	1.93**	0.05	0.85***	0.04	1.75**	0.04
Household incarceration	1.41***	0.03	0.98	0.04	1.36***	0.03
Low self-control	1.31***	0.03	1.11**	0.04	1.25***	0.02
Antisocial peers	0.89***	0.02	0.51***	0.02	2.12***	0.04
Low Empathy	1.46***	0.03	1.14**	0.05	1.13***	0.03
Depression	1.20***	0.05	1.06	0.05	1.59***	0.04
Thought disturbance	1.20***	0.05	1.38***	0.10	1.03	0.04
Poverty status	1.06*	0.02	0.97	0.04	0.90***	0.02
Male	1.08***	0.01	6.49***	0.43	1.97***	0.04
Non-White	1.23***	0.01	0.95*	0.02	0.86***	0.01

Note: Model 1 and 2 n = 63,323, Model 3 n = 61,960. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Model 1 Area Under the Curve (AUC) = 0.668. Model 2 (with Firth option) AUC = 0.689. Model 3 AUC = 0.711.

victimization, in support of hypothesis three. Physical abuse showed only a slight positive increase in risk of future drug offending, while sexual abuse was not statistically significant, a finding contrary to hypothesis four. Notably, poverty status decreased the odds of drug offending, in addition to certain race/ethnicity types, while all other significant control variables in the model were associated with an increased risk of drug offending. Unlike violent and sexual offending, where antisocial peers showed a negative effect when controlling for all other measures, antisocial peers were found to increase the odds of drug offending by more 110 % in this model (OR = 2.12,  $p < .001$ ).

## 6. Discussion

The present study sought to determine if the VO overlap was differentially associated with three types of victimization and offending. In so doing, this study examined whether violent offending is most strongly predicted by physical abuse, sexual offending most strongly predicted by sexual abuse, and drug offending most strongly predicted by household substance abuse, or if any type of victimization increases the risk of any type of offending in support of a more generalized VO relationship. Results of this study provide support for specificity in the VO overlap across the three victimization and offending combinations presently examined.

Specifically, it appears that children who experience physical abuse, sexual abuse, and/or household substance abuse have a much higher risk of engaging in these analogous illegal acts in adolescence, compared to any other type of offending behavior. In line with our first hypothesis, those who had experienced physical abuse as children showed the highest risk of engaging in violent offenses themselves later in adolescence. Consistent with prior studies of serious juvenile offenders (Cuevas, Wolff, & Baglivio, 2019; DeLisi et al., 2017; Trulson, Haerle, Caudill, & DeLisi, 2016), this finding indicates potential support for social learning theory, as youth who are physically abused are engaging in similar behaviors later in life. A potential explanation for this finding is that these youth are learning to deal with conflict through violence, in ways that were modeled to them, and are therefore engaging in the same maladaptive behaviors in their own life. Hypotheses two and three were also supported, as sexual abuse and household substance use similarly had the strongest effect on later sexual and drug offending, respectively. These results may be reflective of the fact that the experience of sexual abuse at a young age can potentially normalize the behavior for the victim, increasing the chance that they may later imitate the behavior themselves. Similarly, adolescents engaging in substance use could have learned through modeling of their household members that drug use is acceptable, and even where to buy drugs and/or how to use them. The observed patterns of distinct victimization/offending associations, even after controlling for all other major criminogenic, psychological, and demographic features, provides evidence for explicit specializations within the VO overlap.

With respect to hypothesis four, our findings indicate that most forms of childhood victimization increased unrelated offending behaviors, albeit to a lesser degree than the analogous offending behavior. In other words, experiencing *any* of the three forms of abuse generally increased a youth's risk of offending (e.g., sexual abuse increases the risk of both future sexual offending as well as violent offending). However, there are several exceptions. Physical abuse was not predictive of future sexual offending, which is in contrast to the findings of Felson and Lane (2009). Similarly, sexual abuse was not significantly predictive of drug offenses, and witnessing household violence decreased the odds of sexual offending. Household substance abuse was also found to significantly decrease the risk of future violent offending and sex offending, when controlling for all other variables in the model. However, prior research has also found weak links between exposure to drug use and violent offending (Staff, Whichard, Siennick, & Maggs, 2015).



However, the relationship between parental drug use and sexual offending is found to be positive in prior research (Levenson, Willis, & Prescott, 2015). This is an interesting finding, as the current study also indicates that parent substance abuse and sexual abuse are the most commonly co-occurring forms of victimization. Potentially, the relationship between parental substance abuse and sexual offending could both be related to childhood sexual abuse.

With respect to the theoretical frameworks proposed for this research, the differential association facet of social learning theory (i.e. admiration and association with antisocial peers) was only shown to increase the risk of drug offending, but had the opposite association for violence and sexual offending. That said, the modeling/imitation elements of social learning theory appear to be strongly supported by this research, as demonstrated by the strong overlaps for specific types of victimization and the analogous forms of future offending and suggest these behaviors may be learned/modeled through the youth's own adverse childhood experiences (ACEs).

Additionally, emotional abuse was negatively associated with violent and sexual offending, emotional neglect reduced the odds of sexual offending, and antisocial peers also decreased the odds of both of these types of offending. These are interesting findings, and counter to research showing emotional abuse and emotional neglect are strong indicators of externalizing problems (Muniz et al., 2019; C.S. Widom, 1989). One potential explanation for the finding regarding antisocial peers is that an association, or friendships with peers could serve as a protective factor for youths having experienced emotional and physical neglect. Indeed, neglected children have typically also been found to be rejected from peers and more likely to engage in violence (Chapple et al., 2005).

Overall, these somewhat contrary results could potentially be due to the fact that prior VO overlap research has not fully considered the impact of other ACEs (i.e. physical and emotional neglect and emotional abuse) criminogenic, psychological, and demographic factors as moderators in the VO relationships. Nevertheless, we found that the specializations in the VO overlap persisted even when controlling for criminological and psychological confounds. This is critically important to both theory and practice, as it suggests that negative and traumatic experiences in childhood are not only frightening and harmful to these youth, they may also systematically increase the risk of the same youth engaging in these same behaviors in the future. Given that adverse childhood experiences are associated with a broad array of negative psychological and behavioral outcomes (Anda, Butchart, Felitti, & Brown, 2010; Anda et al., 2006; Bellis, Lowey, Leckenby, Hughes, & Harrison, 2013; Chapman, Dube, & Anda, 2007; Cicchetti, 2013; Fox, Jennings, & Piquero, 2014; Hillis et al., 2004; Reuben et al., 2016), to include future offending, the inclusion of ACEs and related forms of trauma in early development is essential for criminologists to fully understand the complex nature of offending and its etiology.

### 6.1. Practical implications

The results of this study carry several practical implications that should be considered. First, this study has shown that there is considerable specificity in the VO overlaps tested in this study. Thus, more research is needed to explore specificity among other victimization/offending dyads. Doing so could further elucidate the VO overlap, and inform related prevention programming. Such programming could examine specific forms of parental offending to mitigate the negative consequences children experience. Second, these results suggest that specific programming for victimization type may be more effective in preventing future offending than general prevention efforts. In other words, there may be importance for specificity in treatment given to children with adverse childhood experiences. Similarly, early interventions should be implemented to reduce the negative ramifications of experiencing these specific victimization experiences and ACEs, as well as other ACEs not examined in this study. Finally, future research should explore and elucidate what protective factors lead children to become resilient rather than offenders. Understanding these protective factors or child-specific characteristics lead to resilience would allow practitioners to focus on fostering these factors and characteristics in all children who have experienced ACEs, thus mitigating the ramifications of abuse and violence in the household.

### 6.2. Limitations

The limitations for this study should also be considered. The sample contained a large number of high-risk juvenile offenders, and the associations that these high-risk offenders have with both victimization and offending could potentially differ greatly from those experienced by lower risk offenders who exhibit different risk and protective factors (Craig, Baglivio, Wolff, Piquero, & Epps, 2017; Craig, Piquero, Farrington, & Ttofi, 2017; Wolff, Cuevas, Intravia, Baglivio, & Epps, 2018). Future research should be conducted using community samples. Additionally, this is a sample consisting entirely of juveniles and therefore cannot consider how the VO overlap translates later into adulthood. Future research should use longitudinal data that measures the VO overlap experiences from childhood into adulthood. Last, the data utilized for this study comes from the PACT assessment. This assessment was not collected with the intent purpose to study the relationship between victimization and offending and therefore certain desired measures were not available. Future research should focus on primary data collection to obtain a more complete understanding of how victims become offenders and offenders become victims.

## 7. Conclusion

The VO overlap paradigm is a burgeoning research area in criminology (Baglivio, 2018); however, the vast majority of research findings within this paradigm reveal *general* effects for adverse experiences on *general* maladaptive behaviors. The current study provided novel evidence that *specific* forms of childhood victimization confer greater liability for *specific* and related forms of offending among a population of high-risk youth offenders in Florida. Strong specificity in terms of particular types of victimization

significantly increasing the risk of analogous criminal behavior in adolescence has important implications for research, prevention, and treatment/intervention among high-risk youth, and the future of research on the adverse childhood experiences and victimization paradigms in criminological theory.

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## References

- Akers, R. L. (2011). *Social learning and social structure: A general theory of crime and deviance*. Piscataway, NJ: Transaction Publishers.
- Anda, R. F., Butchart, A., Felitti, V. J., & Brown, D. W. (2010). Building a framework for global surveillance of the public health implications of adverse childhood experiences. *American Journal of Preventive Medicine*, *39*(1), 93–98.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, *256*(3), 174–186.
- Averdijk, M., Van Gelder, J. L., Eisner, M., & Ribeaud, D. (2016). Violence begets violence... but how? A decision-making perspective on the victim–offender overlap. *Criminology*, *54*(2), 282–306.
- Baglivio, M. T. (2009). The assessment of risk to recidivate among a juvenile offending population. *Journal of Criminal Justice*, *37*(6), 596–607.
- Baglivio, M. T. (2018). On cumulative childhood traumatic exposure and violence/aggression: The implications of adverse childhood experiences (ACE). In A. T. Vazsonyi, D. J. Flannery, & M. DeLisi (Eds.). *The Cambridge handbook of violent behavior and aggression* (pp. 467–487). (second edition). New York, NY: Cambridge University Press.
- Baglivio, M. T., Epps, N., Swartz, K., Huq, M. S., Sheer, A., & Hardt, N. S. (2014). The prevalence of adverse childhood experiences (ACE) in the lives of juvenile offenders. *Journal of Juvenile Justice*, *3*, 1–23.
- Baglivio, M. T., & Jackowski, K. (2013). Examining the validity of a juvenile offending risk assessment instrument across gender and race/ethnicity. *Youth Violence and Juvenile Justice*, *11*(1), 26–43.
- Baird, C., Healy, T., Johnson, K., Bogie, A., Dankert, E. W., & Scharenbroch, C. (2013). *A comparison of risk assessment instruments in juvenile justice*. Madison, WI: National Council on Crime and Delinquency.
- Bellis, M. A., Lowey, H., Leckenby, N., Hughes, K., & Harrison, D. (2013). Adverse childhood experiences: Retrospective study to determine their impact on adult health behaviours and health outcomes in a UK population. *Journal of Public Health*, *36*(1), 81–91.
- Bennett, D. A. (2001). How can I deal with missing data in my study? *Australian and New Zealand Journal of Public Health*, *25*(5), 464–469.
- Berg, M. T., Stewart, E. A., Schreck, C. J., & Simons, R. L. (2012). The victim–offender overlap in context: Examining the role of neighborhood street culture. *Criminology*, *50*(2), 359–390.
- Berliner, L., & Elliott, D. M. (2002). Sexual abuse of children. In J. Myers, L. Berliner, J. Briere, H. C. T. C. Jenny, & T. A. Reid (Eds.). *The APSAC handbook on child maltreatment* (pp. 55–78). Thousand Oaks, CA: Sage Publications.
- Broidy, L. M., Daday, J. K., Crandall, C. S., Klar, D. P., & Jost, P. F. (2006). Exploring demographic, structural, and behavioral overlap among homicide offenders and victims. *Homicide Studies*, *10*(3), 155–180.
- Brownlie, J. (2001). The ‘being-risky’ child: Governing childhood and sexual risk. *Sociology*, *35*(2), 519–537.
- Burgess, R. L., & Akers, R. L. (1966). A differential association-reinforcement theory of criminal behavior. *Social Problems*, *14*(2), 128–147.
- Cecil, C. A., Viding, E., Fearon, P., Glaser, D., & McCrory, E. J. (2017). Disentangling the mental health impact of childhood abuse and neglect. *Child Abuse & Neglect*, *63*, 106–119.
- Chapman, D. P., Dube, S. R., & Anda, R. F. (2007). Adverse childhood events as risk factors for negative mental health outcomes. *Psychiatric Annals*, *37*(5), 359–364.
- Chassin, L., Pitts, S. C., DeLucia, C., & Todd, M. (1999). A longitudinal study of children of alcoholics: Predicting young adult substance use disorders, anxiety, and depression. *Journal of Abnormal Psychology*, *108*(1), 106–119.
- Chapple, C. L., Tyler, K., & Bersani, B. E. (2005). Child neglect and adolescent violence: Examining the effects of self-control and peer rejection. *Violence and Victims*, *20*(1), 39–53.
- Cicchetti, D. (2013). Annual research review: Resilient functioning in maltreated children – past, present, and future perspectives. *Journal of Child Psychology and Psychiatry*, *54*(4), 402–422.
- Cops, D., & Pleyzier, S. (2014). Usual suspects, ideal victims and vice versa: The relationship between youth offending and victimization and the mediating influence of risky lifestyles. *European Journal of Criminology*, *11*(3), 361–378.
- Craig, J. M., Baglivio, M. T., Wolff, K. T., Piquero, A. R., & Epps, N. (2017). Do social bonds buffer the impact of adverse childhood experiences on reoffending? *Youth Violence and Juvenile Justice*, *15*(1), 3–20.
- Craig, J. M., Piquero, A. R., Farrington, D. P., & Ttofi, M. M. (2017). A little early risk goes a long bad way: Adverse childhood experiences and life-course offending in the Cambridge study. *Journal of Criminal Justice*, *53*, 34–45.
- Cuevas, C., Wolff, K. T., & Baglivio, M. T. (2019). Dynamic risk factors and timing of recidivism for youth in residential placement. *Journal of Criminal Justice*, *60*, 154–166.
- Daday, J. K., Broidy, L. M., Crandall, C. S., & Sklar, D. P. (2005). Individual, neighborhood, and situational factors associated with violent victimization and offending. *Criminal Justice Studies*, *18*(3), 215–235.
- DeLisi, M., Alcalá, J., Kusow, A., Hochstetler, A., Heirigs, M., Caudill, J., ... Baglivio, M. (2017). Adverse childhood experiences, commitment offense, and race/ethnicity: Are the effects crime-, race-, and ethnicity-specific? *International Journal of Environmental Research and Public Health*, *14*(3), 331.
- Dierkhising, C. B., Ko, S. J., Woods-Jaeger, B., Briggs, E. C., Lee, R., & Pynoos, R. S. (2013). Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network. *European Journal of Psychotraumatology*, *4*(1), 20274–20286.
- Dobrin, A. (2001). The risk of offending on homicide victimization: A case control study. *The Journal of Research in Crime and Delinquency*, *38*(2), 154–173.
- Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science*, *250*(4988), 1678–1683.
- Fagan, A. A. (2005). The relationship between adolescent physical abuse and criminal offending: Support for an enduring and generalized cycle of violence. *Journal of Family Violence*, *20*(5), 279–290.
- Felson, R. B., & Lane, K. J. (2009). Social learning, sexual and physical abuse, and adult crime. *Aggressive Behavior*, *35*(6), 489–501.
- Fox, B. (2017). What makes a difference? Evaluating the key distinctions and predictors of sexual and non-sexual offending among male and female juvenile offenders. *Journal of Criminal Psychology*, *7*(2), 134–150.
- Fox, B., & DeLisi, M. (2018). From criminological heterogeneity to coherent classes: Developing a typology of juvenile sex offenders. *Youth Violence and Juvenile Justice*, *16*(3), 299–318.
- Fox, B., Jennings, W., & Piquero, A. R. (2014). Serious, chronic, and violent offenders. In W. Church, & D. Springer (Eds.). *Juvenile justice sourcebook: Past, present and future* (pp. 554–579). New York, NY: Oxford University Press.
- Fox, B., Perez, N., Cass, E., Baglivio, M. T., & Epps, N. (2015). Trauma changes everything: Examining the relationship between adverse childhood experiences and serious, violent and chronic juvenile offenders. *Child Abuse & Neglect*, *46*, 163–173.

- Franzese, R. J., Menard, S., Weiss, A. J., & Covey, H. C. (2017). Adolescent exposure to violence and adult violent victimization and offending. *Criminal Justice Review*, 42(1), 42–57.
- Friedrich, W. N., & Boriskin, J. A. (1976). The role of the child in abuse: A review of the literature. *The American Journal of Orthopsychiatry*, 46(4), 580–590.
- Frodi, A. M., Lamb, M. E., Leavitt, L. A., Donovan, W. L., Neff, C., & Sherry, D. (1978). Fathers' and mothers' responses to the faces and cries of normal and premature infants. *Developmental Psychology*, 14(5), 490–498.
- Gilligan, R. (2000). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children & Society*, 14(1), 37–47.
- Gottfredson, M. G. (1981). On the etiology of criminal victimization. *The Journal of Criminal Law & Criminology*, 72(2), 714–726.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Redwood, CA: Stanford University Press.
- Hiday, V. A., Swanson, J. W., Swartz, M. S., Borum, R., & Wagner, H. R. (2001). Victimization: A link between mental illness and violence? *International Journal of Law and Psychiatry*, 24(6), 559–572.
- Hillis, S. D., Anda, R. F., Dube, S. R., Felitti, V. J., Marchbanks, P. A., & Marks, J. S. (2004). The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. *Pediatrics*, 113(2), 320–327.
- Hunter, R. S., Kilstrom, N., Kraybill, E. N., & Loda, F. (1978). Antecedents of child abuse and neglect in premature infants: A prospective study in a newborn intensive care unit. *Pediatrics*, 61(4), 629–635.
- Hussong, A. M., Bauer, D. J., Huang, W., Chassin, L., Sher, K. J., & Zucker, R. A. (2008). Characterizing the life stressors of children of alcoholic parents. *Journal of Family Psychology*, 22(6), 819–832.
- Jennings, W. G., Higgins, G. E., Tewksbury, R., Gover, A. R., & Piquero, A. R. (2010). A longitudinal assessment of the victim-offender overlap. *Journal of Interpersonal Violence*, 25(12), 2147–2174.
- Jennings, W. G., & Meade, C. N. (2017). Victim-offender overlap among sex offenders. In B. Francis, & T. Sanders (Eds.). *Oxford handbook of sex offences and sex offending* (pp. 183–196). New York, NY: Oxford University Press.
- Jennings, W. G., Piquero, A. R., & Reingle, J. M. (2012). On the overlap between victimization and offending: A review of the literature. *Aggression and Violent Behavior*, 17(1), 16–26.
- Jennings, W. G., Zgoba, K. M., Maschi, T., & Reingle, J. M. (2014). An empirical assessment of the overlap between sexual victimization and sex offending. *International Journal of Offender Therapy and Comparative Criminology*, 58(12), 1466–1480.
- Jensen, G. F., & Brownfield, D. (1986). Gender, lifestyles, and victimization: Beyond routine activity. *Violence and Victims*, 1(2), 85–99.
- Jenson, G. F., & Brownfield, D. (1986). Gender, lifestyles, and victimization: A causal analysis. *Violence and Victims*, 1, 58–99.
- King, G., & Zeng, L. (2001). Logistic regression in rare events data. *Political Analysis*, 9(2), 137–163.
- Klevens, J., Duque, L. F., & Ramirez, C. (2002). The victim-offender overlap and routine activities: Results from a cross-sectional study in Bogota, Columbia. *Journal of Interpersonal Violence*, 17(2), 206–216.
- Lauritsen, J. L., & Laub, J. H. (2007). Understanding the link between victimization and offending: New reflections on an old idea. In M. Hough, & M. Maxfield (Eds.). *Surveying crime in the 21st century* (pp. 55–75). Monsey, NY: Criminal Justice Press.
- Lauritsen, J. L., Sampson, R. J., & Laub, J. H. (1991). The link between offending and victimization among adolescents. *Criminology*, 29(2), 265–292.
- Levenson, J. S., Willis, G. M., & Prescott, D. S. (2015). Adverse childhood experiences in the lives of female sex offenders. *Sexual Abuse*, 27(3), 258–283.
- Loeber, R., & Farrington, D. P. (2000). Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications. *Development and Psychopathology*, 12(4), 737–762.
- Maldonado-Molina, M. M., Jennings, W. G., Tobler, A. L., Piquero, A. R., & Canino, G. (2010). Assessing the victim-offender overlap among Puerto Rican youth. *Journal of Criminal Justice*, 38(6), 1191–1201.
- Maxfield, M. (1987). Lifestyle and routine activity theories of crime: Empirical studies of victimization, delinquency, and offender decision-making. *Journal of Quantitative Criminology*, 3(4), 275–282.
- Maxfield, M. G., & Widom, C. S. (1996). The cycle of violence: Revisited 6 years later. *Archives of Pediatrics & Adolescent Medicine*, 150(4), 390–395.
- Mawby, R. I. (1979). The victimization of juveniles: A comparative study of three areas of publicly owned housing in Sheffield. *The Journal of Research in Crime and Delinquency*, 16(1), 98–113.
- Mayhew, P., & Elliott, D. (1990). Self-reported offending, victimization, and the British crime survey. *Violence and Victims*, 5(2), 83–96.
- McCoy, M. L., & Keen, S. M. (2009). *Risk factors for child maltreatment. Child abuse and neglect*. New York, NY: Psychology Press 19–29.
- McGloin, J., Schreck, C. J., Stewart, E. A., & Ousey, G. C. (2011). Predicting the violent offender: The discriminant validity of the subculture of violence. *Criminology*, 49(3), 767–794.
- Meade, C. N., Jennings, W. G., Gover, A. R., & Richards, T. N. (2017). On the linkage between sexual violence victimization and intimate partner violence outcomes among male and female college students. *Journal of Aggression, Conflict and Peace Research*, 9(4), 257–268.
- Moffitt, T. E. (1990). Juvenile delinquency and attention deficit disorder: Boys' developmental trajectories from age 3 to age 15. *Child Development*, 61(3), 893–910.
- Moffitt, T. E., & Henry, B. (1989). Neuropsychological assessment of executive functions in self-reported delinquents. *Development and Psychopathology*, 1(2), 105–118.
- Moffitt, T. E., & Silva, P. A. (1988). Neuropsychological deficit and self-reported delinquency in an unselected birth cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27(2), 233–240.
- Monahan, K. C., Steinberg, L., & Cauffman, E. (2009). Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood. *Developmental Psychology*, 45(6), 1520–1530.
- Muniz, C. N., Fox, B., Miley, L. N., Delisi, M., Cigarran, G. P., & Birnbaum, A. (2019). The effects of adverse childhood experiences on internalizing versus externalizing outcomes. *Criminal Justice and Behavior*, 46(4), 568–589.
- Mustaine, E. E., & Tewksbury, R. (2000). Comparing the lifestyles of victims, offenders, and victim-offenders: A routine activity theory assessment of similarities and differences for criminal incident participants. *Sociological Focus*, 33(3), 339–362.
- Papalia, N., Luebbers, S., & Ogloff, J. R. (2018). Child sexual abuse and the propensity to engage in criminal behaviour: A critical review and examination of moderating factors. *Aggression and Violent Behavior*, 43, 71–89.
- Piquero, A. R., Farrington, D. P., & Blumstein, A. (2003). The criminal career paradigm. *Crime and Justice*, 30, 359–506.
- Plummer, M., & Cossins, A. (2018). The cycle of abuse: When victims become offenders. *Trauma, Violence & Abuse*, 19(3), 286–304.
- Posick, C. (2013). The overlap between offending and victimization among adolescents: Results from the second international self-report delinquency study. *Journal of Contemporary Criminal Justice*, 29(1), 106–124.
- Regoeczi, W. (2000). Adolescent violent victimization and offending: Assessing the extent of the link. *Canadian Journal of Criminology*, 42(4), 493–505.
- Reiss, A. J., Jr, & Roth, J. A. (1994). *Understanding and preventing violence. Consequences and control, Vol. 4*. Washington, D.C: National Academy Press.
- Reuben, A., Moffitt, T. E., Caspi, A., Belsky, D. W., Harrington, H., Schroeder, F., ... Danese, A. (2016). Let's not forget: Comparing retrospective and prospective assessments of adverse childhood experiences in the prediction of adult health. *Journal of Child Psychology and Psychiatry*, 57(10), 1103–1112.
- Rosow, I., Keating, P., Felix, L., & McCambridge, J. (2016). Does parental drinking influence children's drinking? A systematic review of prospective cohort studies: Influence of parental drinking. *Addiction*, 111(2), 204–217.
- Ryan, J. P., Perron, B. E., Moore, A., Victor, B., & Evangelist, M. (2016). Foster home placements and the probability of family reunification: Does licensing matter? *Child Abuse & Neglect*, 59, 88–99.
- Savitz, L. D., Lalli, M., & Rosen, L. (1997). *City life and delinquency: Victimization, fear of crime, and gang membership*. Washington, D.C: Department of Justice, National Institute for Juvenile Justice and Delinquency Prevention.
- Schreck, C. J. (1999). Criminal victimization and low self-control: An extension and test of a general theory of crime. *Justice Quarterly*, 16(3), 633–654.
- Schreck, C. J., Stewart, E. A., & Osgood, D. W. (2008). A reappraisal of the overlap of violent offenders and victims. *Criminology*, 46(4), 871–906.
- Schreck, C. J., Wright, R. A., & Miller, J. M. (2002). A study of individual and situational antecedents of violent victimization. *Justice Quarterly*, 19(1), 159–180.
- Sher, K. J., Grekin, E. R., & Williams, N. A. (2005). The development of alcohol use disorders. *Annual Review of Clinical Psychology*, 1, 493–523.
- Silver, E., Piquero, A. R., Jennings, W. G., Piquero, N. L., & Leiber, M. (2011). Assessing the violent offending and violent victimization overlap among discharged

- psychiatric patients. *Law and Human Behavior*, 35(1), 49–59.
- Smith, C., & Thornberry, T. P. (1995). The relationship between childhood maltreatment and adolescent involvement in delinquency. *Criminology*, 33(4), 451–481.
- Soothill, K., Francis, B., Sanderson, B., & Ackerley, E. (2000). Sex Offenders: Specialists, generalists—Or both? A 32-year criminological study. *The British Journal of Criminology*, 40(1), 56–67.
- Spaccarelli, S., Bowden, B., Coatsworth, J. D., & Kim, S. (1997). Psychosocial correlates of male sexual aggression in a chronic delinquent sample. *Criminal Justice and Behavior*, 24(1), 71–95.
- Staff, J., Whichard, C., Siennick, S. E., & Maggs, J. (2015). Early life risks, antisocial tendencies, and preteen delinquency. *Criminology*, 53(4), 677–701.
- Sullivan, P. M., & Knutson, J. F. (2000). Maltreatment and disabilities: A population-based epidemiological study. *Child Abuse & Neglect*, 24(10), 1257–1273.
- Trulson, C. R., Haerle, D. R., Caudill, J. W., & DeLisi, M. (2016). *Lost causes: Blended sentencing, second chances, and the Texas youth commission*. Austin, TX: University of Texas Press.
- Westcott, H. L., & Jones, D. P. (1999). Annotation: The abuse of disabled children. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 40(4), 497–506.
- Widom, C. S. (1989). The cycle of violence. *Science*, 244(4901), 160–166.
- Widom, C. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin*, 106(1), 3–28.
- Widom, C. S., Czaja, S. J., & DuMont, K. A. (2015). Intergenerational transmission of child abuse and neglect: Real or detection bias? *Science*, 347(6229), 1480–1485.
- Winokur-Early, K., Hand, G. A., & Blankenship, J. L. (2012). *Validity and reliability of the Florida Positive Achievement Change Tool (PACT) risk and needs assessment instrument: A three-phase evaluation (validation study, factor analysis, inter-rater reliability)*. Tallahassee, FL: Justice Research Center.
- Wolff, K. T., Cuevas, C., Intravia, J., Baglivio, M. T., & Epps, N. (2018). The effects of neighborhood context on exposure to adverse childhood experiences (ACE) among adolescents involved in the juvenile justice system: Latent classes and contextual effects. *Journal of Youth and Adolescence*, 47(11), 2279–2300.
- Wolfgang, M. E. (1958). *Patterns in criminal homicide*. Philadelphia, PA: University of Pennsylvania Press.
- Zimmerman, G. M., Farrell, C., & Posick, C. (2017). Does the strength of the victim-offender overlap depend on the relationship between the victim and perpetrator? *Journal of Criminal Justice*, 48, 21–29.
- Zingraff, M. T., Leiter, J., Myers, K. A., & Johnsen, M. C. (1993). Child maltreatment and youthful problem behavior. *Criminology*, 31(2), 173–202.

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